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## **How do the social norms sustain?**

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### **Abstract**

The present study attempts to provide reasons for sustainability of social norms. Here, the people are considered as competitors, where everyone tries to improve his position in the society by proving himself better than others. In this situation, a person has an incentive to punish the rule breaker as well as people related to him, if the breaking of rule gives him opportunity to improve his position by punishing them. Further, the people related to the rule breaker have incentive to punish him if they can reduce the extent their punishment by doing so. A person may also use the punishment activity for gains if people who have internalized the norm pay him for his services in different ways due to their conscience. In addition, the conditions for the taking up the punishment activity are also worked out.

**Key words:** Social norms, sustainability, emotions and competition.

## **1. Introduction**

In spite of largely understood fact that social norms have an impact on decisions of the people, the question that remains unanswered is: how do social norms sustain? In other words, the enforcement mechanism of the social norms is not clear. However, a few attempts have been done to shed some light on this issue.

The most common explanation provided for the sustainability is that people follow the norms fearing the punishment from others. Each person, who punishes the rule breaker (here the word 'rule' has the same meaning as the word 'norm' and will be used interchangeably), does so because he expects a punishment from others in case he fails to punish the rule breaker. Extending the same argument, a person punish those, who fail to punish rule breaker, since he also anticipates punishment in case they could not do so, and this will go on like this. In other words, due to the fear of punishment from each other, people are trapped in an equilibrium position which, depending on its impact, can be good or bad. This line of argument is criticized by many studies. For example, Elster (1989) pointed out that each punishment activity has a cost on the punisher, as he has to put time and efforts for this. Further, when one go far from the defector in the chain of an action, the expected cost imposed by others, for not punishing the rule breaker or punishing someone who has not punished the rule breaker, decreases. This increases the chance that the person will not punish those who do not punish the rule breaker. This happens due to the decrease in the likelihood of getting punished in comparison to the cost one has to bear to punish the rule breaker.

The role of emotions in individual decision-making provides another explanation for the sustainability of social norms. The advocates of this argument suggest that the

sanctions, originated due to emotions, can sustain the punishment for a long time (see Elster, 1996). Though, this line of argument indicates a way to explain the reason behind sustainability of the norms, it fails to provide any framework for it. Further, this argument does not provide any explanation for the free rider problem that exists in the emotionally motivated actions of a person due to social norms. For example, if punishing someone is a costly affair, why would someone scold or frown at a person for not behaving in a socially approved way when others can also do it? Though the researchers, who propose the emotions as the explanation for sustaining the social norms, have not provided any reason for the emotional reactions of the people, the importance of emotions in explaining the sustainability of social norms cannot be denied.

This paper attempts to provide the reasons for the sustainability of the social norms by giving an explanation for the emotional reactions. It has been observed that emotional reactions are linked to the motives. Lazarus (2001) pointed out that people react emotionally when their motives are gratified, threatened, or frustrated. It means that any appreciation or disturbance of the motives of a person create a psychological cost on him which comes down after his emotional reaction. For instance, an insult creates the emotion, anger, in a person which disturbs him until he respond to the situation. Similarly, an appreciation puts a psychological cost the person and compels him to react; nevertheless this reaction will be different from the earlier one. Here, decrease in the psychological cost depends on the type of reaction.

Taking the reason for the emotional reactions as base, the punishment behavior can be explained if we consider that people compete each other for the better position in society and breaking of a rule by a person gives others a chance to improve their position by proving the rule breaker inferior in society. Further, people perceive their

success and failure not only with their own performance in relation to others but also with the performance of the people who are related to them in comparison to others who are not. Therefore, having a relationship with a rule breaker can also be used to show a person inferior (we call it a ‘bad name’). The relation with a rule breaker may also be taken as a signal for a person’s untrustworthiness. In this situation, the people related to the rule breaker have incentive to punish the rule breaker if by doing so they can prove others that they are no longer related to the rule breaker.

The internalization of norm is another reason for a person to take up costly action of punishment. It gives the punisher a satisfaction by providing him a reason to have a good opinion about himself, which motivates him to take up costly actions against the rule breaker (Nelson and Greene, 2003 give a similar argument for explaining altruistic tendencies). The reaction against a rule breaker can help a person to get the praise of the people who have internalized the norm, and also establish him as a strong person. Both of these will benefit the punisher by increasing his power and, thereby, reducing the cost of performing other activities. Thus, this explanation for the sustainability shows that it is in the self-interest of the people to punish the rule breaker. The paper, further, discusses the conditions for taking up the punishment activities and the factors that will influence the cost of these activities. It shows that a powerful or a rich person tends to take up more punishment activity but receive comparatively less punishment. Here, power of a person is taken as his capacity to influence others welfare due to their dependency on him.

The paper is structured as follows. After the introduction in first section, the motivation behind the emotional reactions is discussed in section two. The next section provides the reasons for the sustainability of the social norms and the

conditions for the punisher's reactions are modeled. The study is concluded in the fourth section.

## **2. Motivation behind the emotional reactions**

Emotions are the feelings that arise in response to situations, people, objects, or events. The eliciting stimuli that trigger emotional reactions can be external or internal, for instance, memory of a pleasant moment can make us feel happy (Passer and Smith, 2007). In this regard, Lazarus (2001), an emotion theorist, pointed out that motivation and emotions are linked, because people react emotionally only when their motives and goals are gratified, threatened, or frustrated. Therefore, the basic motivation for any activity comes from the situation or event, and not from emotions. So the question is: why do people react to a situation or an event emotionally?

The whole process has to be divided into parts to understand the answer of the above question. First of all, a situation or an event that creates emotions shows the impact of the situation or event on the utility of a person. A situation, which is costly for the people, creates bad emotions like sadness, frustration, anger and so on, whereas a situation, which adds to the utility of the people, generate good emotions such as happiness, proud, love and so on. Here, good and bad are used in relation to emotions which represent increase and decrease in utility, respectively. Once the situation generates emotions, one has to choose whether to respond to the situation or not. There is a cost involved for any reaction which theoretically can range from zero to infinity, but not reacting can be costly too. For example, take the case of anger, suppose a person comes to know that he has suffered losses due to some unavoidable circumstances and feels angry after listening the news. In this situation, he can either

chose to react by shouting at someone, breaking something or doing some other activity, whereas another option for him is to stay calm, that is, not to react.

A reaction is costly in the sense that the person has to suffer some kind of loss, like bitterness in relationship if someone is shouted at without his fault, loss due to breaking of goods or cost of performing any other activities (there can be many other considerations for any reaction such as creating trustworthiness, showing oneself tough and so on, but we shall discuss these later). On the other hand, one has to bear a psychological cost for staying calm. An emotional reaction by the person, in the above example, will decrease the psychological cost imposed by the loss on him. Similarly, an emotional reaction on a good news, such as jumping with joy, hugging his friends or family, enhance the welfare of the person, and any try to suppress the emotion creates discomfort, hence proves to be costly. Elster (1996) noted that not reacting to an emotion has a psychological cost that may be quite severe, and suppression of spontaneous emotional experiences and action tendencies may have a large negative impact on person's psychology as well as physical health. He, further, pointed out that cancer patients who suppress their emotions have worse survival chances than others. However, we will be considering the psychological cost only, since impact on physical health is the result of the psychological cost that one has to bear due to not reacting.

It shows that a person who reacts to the situation has lesser psychological cost than someone who does not. Nonetheless, one should not confuse the reaction due to emotions with the effort to prevent the situation which leads to the rise of an emotion. For instance, it is well known that feeling of shame prevents people from doing certain types of activities, which is the an effort to prevent those situation to happen which can cause shame for the person. Whereas, the emotional response to the

situation will be to decrease the cost of shame through different ways like hiding himself from others or feeling sorry.

Given the cost and benefits of an emotional response to a situation, a person may choose the least costly way to reduce the psychological cost. Assuming that a person can find the reduction in psychological cost by incurring a unit reaction cost by each available way of reacting, and can compare them to find a reaction (or reactions) which can reduce a level of the psychological cost by incurring minimum cost of response. If we consider reducing psychological cost as a production of psychological service and cost of reaction as cost of production of that service, then a person will try to minimize the cost of production for any production level, and assuming the diminishing marginal benefits and increasing marginal cost of the production, the service will be produced till the marginal cost of production becomes equal to the marginal benefits. Putting it in other words, people try to minimize the sum of psychological and reaction cost. One may prefer to suffer psychological cost if the cost of reaction is very high. For example, people feel angry if someone hurt them, however their response depends up on their own strength in comparison to others. A person may beat up a weak person for hurting him, just shout or frown at a person who is equally strong and find not reacting as the better strategy if the other person is stronger than him. Assuming the similar reduction in psychological cost for similar reaction in all the cases and cost of reaction as the function of the strength of the person who has done the harm, people are more likely to take stronger action against the weak than the stronger one. This is because the cost of a reaction against a weak person is lesser compared to a strong one. This is the reason that many times, a parson, who could not do anything against a strong person, act violently against someone, who may have nothing to do with the matter, but at the same time, is not



strong enough to do any significant harm. This reaction against an innocent weak person is just to decrease his psychological cost. All these strategies of the people are to minimize the total cost of a situation or an event.

The above explanation tells us about the reason behind the emotional response of the people, nevertheless it is incomplete until we know the reason for the emotional arousal in a situation which has nothing to do with them. There are a few attempts to explain these reactions. Nelson and Greene (2003), while explaining the reasons behind the altruistic acts, provide a few important insights into the matter. They argue that altruism is important in kinship relations only, and plays little role in other cases. They consider altruistic tendencies as the result of social norms, and people follow these norms for two reasons. First, people follow social rules (norms) to signal others of their trustworthiness. Second, everyone likes to have a good image of himself, and he behaves in accordance with the internalized norms to feel that he is a good person which is generally labeled as conscience. Due to the signal effect, people who behave altruistically will be considered trustworthy and, hence, are expected to grow faster than the others. Similarly, conscience can also create incentives to perform an activity. Thus, it is in the self-interest of the people to prove themselves trustworthy and follow their conscience, as former will help them to grow and latter will give them utility by letting them feel themselves a good person. As a result, the norms can sustain in the long run. However, their study is limited to the analysis of those social norms, which create altruistic behavior, and does not provide any insight in the sustainability of the norms which do not create altruism. Many social norms, such as caste system in India, honor killing in many societies, and marriage related norms, seem to have little to do with conscience or signaling trustworthiness. Further, conscience signifies a category of internalized norms that generate altruism; therefore

the word 'conscience' cannot be used to represent all internalized norms. In addition, conscience and desire to be considered trustworthy are less likely to induce people to punish the rule breaker and people certainly have other reasons to react in these cases.

### **3. Reasons for punishing the rule breakers**

Given all this, the existence and the sustainability of norms can be explained on the basis of five factors, utility gain from the relative improvement in punisher's position (by diluting the position of others) in the society, bad name, internalization of norm, signal trustworthiness and gaining importance in his group. We will discuss the five reasons in detail and try to argue that it is in the self-interest of the people to follow social rules and punish the rule breaker. Here, the words 'norm' and 'rule' bear the same meaning.

First important reason for the reaction of people is their utility gain from relative improvement in their position in the society. People generally consider others as competitors and try to evaluate their success in comparison to others achievements. People feel happy when they perform better than others and grieve when they could not. People often use the failures of their competitors to show that they are inferior to them (it is generally believed that people tend to use it more against the close competitors, however this hypothesis needs to be tested). People perform costly activities to show others down because showing others down gives them a utility, since by doing so they can show others that they are better or superior than him. The utility gain in this case is only for the person who has incurred the cost for it, that is, has commented or criticized the rule breaker. Therefore, a person may find commenting the rule breaker beneficial.

The above argument can be, further, extended to discuss the second reason, that is, 'bad name'. For the people, the feeling of happiness or sadness is not just limited to their own success, and they also feel proud on the relatively better position of anyone (or anything) who (which) is associated to them. For example, a student feel happy when he gets better score than his classmate, but at the same time he also feels good if his class is performing better than the other classes in the school, further, he will be proud of if his school is considered better than the others, and this will go on. At each level of comparison, one wishes a person or a group success if he can use the word 'my' (word 'me' if he, himself, is competing with others) for that person or group. Here, the closeness of the relation also matters, for instance, one, most probably, will wish his brother than his friend to succeed, when both are competing for the same thing. On the other hand, a person feels ashamed at someone, who is associated with him, but not performing well in comparison to his competitors. For example, a person feels depressed when he could not achieve something and a father feels annoyed if his son could not get good position in his class.

People often use the breaking of the social norm by a person or anyone who is associated with that person, like relative, friend, part of the same social or religious group, from same place and so on, as a comment or criticism to show him inferior. This state of being criticized or commented is generally known as 'bad name'. The comments or criticism change the relative position of the people in a society by affecting the reputation of the person, and certainly has its psychological cost on a person who either has broken the social rule or is, in some way, associated with the rule breaker. This reason leads to the reaction of the person to minimize the cost. A person reacts to signal others that he is no longer associated with the rule breaker and does not share any feeling or trait with him. The reaction can be just ending his

association with the rule breaker or punishing him in some other way. The reaction decreases the cost of 'bad name' only for the person who has responded to the situation and not for any other person. It is because a reaction generates the signal for the person who has performed the reaction. Therefore, everyone has an incentive to incur a cost to punish the rule breaker.

In a society, a large number of people's reactions against the rule breaker can be attributed to 'bad name'. For example, Jafri (2008:2) discussed the case of honour killing of Samia Sarwar by her parents in Lahore, Pakistan. While discussing the view point of the supporters of the killing, he notes, "The crime, in their view, was committed by Samia; the parents merely committed an act of reordination of their universe; they were forced to address the dissonance created by the dishonourable act committed by their daughter." This statement clearly points towards the decrease in the cost of bad name for the people who performed the act of killing. The cost imposed by bad name on any person depends up on the severity of the cost imposed by the norm, that is, the severity of the action of the rule breaker and the closeness of the relationship between affected person and the rule breaker. Here, severity of the action means the change in the relative position of the rule breaker compared to his earlier position in the society due to breaking of the norm. For example, breaking of the norms related to eating will most probably invite fewer comments or lesser bad name compared to stealing, and the family has to bear the higher cost of bad name than the relatives. Similarly, the relatives may have to bear higher cost than the friends, friends than others and so on.

Third reason of the reaction of the people is the internalization of the norm. Internalization of the norm creates a psychological cost for the person around whom the restricted activity is happening. To elaborate it further, think about a norm that has

been internalized by a person. Internalization of a norm generally means that a person gets utility by following the norm. In addition, a person also gets utility if others follow that norm and loses utility when any event, which is restricted by the norm, happens. The utility loss can be called as psychological cost and depends upon the closeness of the relationship, for example, breaking of the norm by a family member may create much more psychological cost than any stranger. In spite of this, the psychological cost due to breaking of social norm does not provide an answer to the free rider problem, that is, if it is costly to punish someone and at the same time punishing the rule breaker brings down the cost for everyone who has internalized the norm, then everyone would like others to punish the rule breaker. In this way, one can save the cost of punishing. Therefore, there should be more decrease in psychological cost for the punisher to motivate him to discipline the rule breaker. In fact, the tendency to leave the punishment activity on others can be easily found among people. Nonetheless, studies fail to notice the fact that a person feels good about himself not only by following the internalized norm (Nelson and Greene, 2003) gave a similar argument while discussing the altruistic activities due to internalization of norms), but also by punishing the rule breaker himself. For example, if someone is behaving in a way which is prohibited by the internalized norm of a person. The person will feel happy if the rule breaker gets punished for his activity, however the happiness will be more if he can punish the rule breaker himself. By punishing the rule breaker, the person will get a chance to feel good about himself. In other words, a person gets an additional reduction in psychological cost by punishing the rule breaker himself. As a result, a person always has an incentive to perform the punishment activity himself rather than depending on others to do it.

Fourth reason to punish the rule breaker is to establish himself trustworthy. It is generally recognized that people follow norms to prove that they are trustworthy as not following the norm is a signal of untrustworthiness for others. However, the fact that to study the character of any person, people monitor not only the behavior of that person but also observe the activities of people associated with him like family, relatives, friends and other partners. An association with an untrustworthiness person creates doubts in the minds of the people and they often consider having relation with a norm breaker as a signal of his untrustworthiness. It is because people learn things from people around them and internalize their traits; hence, it is believed that a person who is associated with dishonest people is likely to share their traits. Just like the case of bad name, the impact of untrustworthiness of an associated person depends upon the strength of association (or closeness of relation) with him and degree of his untrustworthiness. Further, a person tries to punish the rule breaker, who is associated with him, if it makes him untrustworthy in the eyes of others. Therefore, it is in the self-interest of the person to punish the rule breaker, as it gives others a signal that he does not share any trait with the rule breaker and, thereby, is completely trustworthy.

Fifth reason for reacting against a rule breaker is to get importance in his own group. Getting importance in the group means getting praised by others and gaining authority over them. Two things happen when a person punishes a rule breaker. First, the person creates a reputation of being a tough person. Second, other people who have internalized the norm also get some satisfaction from the act of punisher and, hence, feel indebted to him. The former effect is the function of the cost that the person imposes on the rule breaker. However, the person has to bear a cost to impose a cost on rule breaker (that is, to punish him). In this situation, there can be two possible reasons for imposition of a high cost on the rule breaker by a person. First possibility

is that the event imposes a high psychological cost on that person (it may be due to his loose temper or high internalization of the norm) and, therefore, he is likely to bear higher cost than an average person. The second possibility is that he can impose high cost on others at comparatively lower cost, which may be the result of his higher power in comparison to the others. Both the reasons give him the reputation of a tough person. The reputation of a tough person serves an important purpose for the punisher. People try to have association with strong persons to bring their own cost of action down and proving himself tough helps the person to get the attention of strong people, that is, it is used as a signal to recognize the useful strong people to form the network. The formation of network brings the cost of reaction further down for all the members. Nonetheless, these networks can take different shapes of closely netted groups and can even act against each other.

The latter reason that the people feel indebted to him for adding to their utility gives him two types of utility. It increases the utility directly by getting praised by others, as people like to be praised. Further, people due to the feeling of indebtedness would like to bear a certain cost for him, since this will help them to feel good about themselves (this happens just like what is discussed in the case of the internalized norms). Though, the cost that each person is willing to bear for the punisher may not very high, nonetheless the addition of the cost that all people are ready to bear may be higher enough to increase in his power substantially. The increase in power may be in the form of gain of political power, escape the cost of law and so on. The increase of power and praise of the person can also be considered as the upward movement in his position in the society, which has both psychological and monetary benefits.

Due to all these reasons, it is in the self-interest of the people to punish the rule breaker. The cost, a punisher will be ready to bear, depends upon his psychological

benefits (that is reduction in psychological cost or psychological satisfaction) and other benefits of the punishing activity. Further, the cost incurred by a person may not be equal to the cost imposed by him on rule breaker. In addition, a powerful rule breaker is less severely punished because people have to incur a higher cost to punish him. On the other hand, he can punish the rule breaker severely at lesser cost than others. If we consider that a person incurs a cost to produce the cost on rule breaker, then the power can be defined as the productivity of the person, that is, a person is more powerful than someone else if he, at the same cost, can produce (or impose) the higher cost than the other, or a powerful person is the one who has to incur less cost than others for the same level of production of cost. Here, we will be considering power as a cost-reducing factor for any activity. The following model illustrates this.

### 3.1. The Model

Consider a society with a set,  $N$ , of people, where  $N = \{1, 2, \dots, n\}$ , that is, there are total of  $n$  individual in the society. Suppose, a person,  $j$ , breaks a norm.  $Y$  is a set of all actions, which can be performed to punish the rule breaker  $j$ , where  $Y = \{y_1, y_2, \dots, y_k\}$ . Thus, total of  $k$  actions are available to punish the rule breaker. Let all the activities can be broken into small units and  $a_{rij}$  denotes the number of units of an action  $y_r$  that are performed by person  $i$  against  $j$ . If person  $i$  has performed zero units of the activity  $y_r$  against  $j$ , then  $a_{rij} = 0$ .

Suppose  $m_i$  is the power of  $i$ , and  $m_{ij}$  is the power of  $i$  in comparison to  $j$ , where  $m_{ij} = m_i / m_j$ . Here, the power of a person is defined as his capacity to affect the other's welfare. The capacity of a person to affect others' welfare depends upon others' dependency on him. Therefore, before discussing the meaning of power, we



need to understand the meaning of dependency. Suppose,  $d_{ij}$  denotes the level of dependency of individual  $i$  on  $j$ , where  $d_{ij}$  is not equal to  $d_{ji}$ , that is,  $d_{ij} \neq d_{ji}$ . Here dependency means, the loss of a person due to the breakage of his ties with the other one. People purchase goods from others and sell others the commodities produced by them. In case of purchase of goods, the dependency of a person on the other can be described as the loss of utility due to loss of consumption of a certain quantity of good and an addition in the cost of getting the new quantity of good from an alternative source. If the person is selling the commodities to other then his dependency will be the loss income from selling his goods to someone else. Here, goods include both materialistic goods (like income, food and clothing) and non-materialistic goods (such as love, care, and affection).

Take an example to elaborate it, suppose a person  $j$  is receiving  $q$  quantity of a good from a person  $i$  at a price  $p$  per commodity. His total cost of having the good will be  $c = qp$ . However, it may not be a market good, in that case the price of a non-market good will be the opportunity cost of having that good. The opportunity cost of a good is the efforts that the person has put in the form of time spent and hardship done to receive it. Suppose in a new situation at a time point  $T$ , price of the good from an alternative source is  $p_1$  and quantity received is  $q_1$ . The quantity of good lost is  $\Delta q = q - q_1$  and the additional cost that the person has to pay for  $q_1$  quantity of good will be  $\Delta c = q_1 p_1 - q_1 p$ . In this case, the total loss for the person will be loss of utility due to less consumption of good, and an addition in the cost of having the quantity  $q_1$  at new price  $p_1$ . Let  $v(\Delta q)$  be the monetary valuation of welfare loss due to less consumption. Adding the two losses will give  $j$ 's loss from purchase of a good, which is  $\Delta c + v(\Delta q)$ . Suppose  $j$  is selling  $q^s$  quantity of a good to  $i$  at a price  $p^s$ . In

the new situation,  $j$  has to sell his goods to someone else and the price at which he sells the same quantity is  $p_1^s$ . If the new price is lesser than the earlier,  $i$  has to suffer a loss equal to  $q^s(p^s - p_1^s) = q^s \Delta p^s$ , where  $\Delta p^s$  is the difference in two prices. Given all this, the total loss of  $j$  due to his breakage of the relationship with  $i$  will be  $\Delta c + v(\Delta q) + q^s(p^s - p_1^s)$ . This loss of  $j$  is termed as his dependency on  $i$ .

In case, the relationship involves the dependency for more than one goods, then the dependency of  $j$  on  $i$  at time point  $\tau$  can be written as  $d_{ji\tau} = \Delta c_\tau^1 + v(\Delta q_\tau^1) + q_\tau^{s1} \Delta p_\tau^{s1} + \Delta c_\tau^2 + v(\Delta q_\tau^2) + q_\tau^{s2} \Delta p_\tau^{s2} + \dots$ , where  $d_{ji\tau}$  is the dependency of  $j$  on  $i$ ,  $\Delta c_\tau^1$  and  $v(\Delta q_\tau^1)$  represent the loss due to higher cost and less consumption of good 1, respectively, and  $q_\tau^{s1}$  and  $\Delta p_\tau^{s1}$  are the quantity supplied and price difference of good  $s1$  at any time period  $\tau$ . If the relationship between  $j$  and  $i$  is expected to provide  $j$  the benefits for  $T$  periods, the losses will be the present value of all future losses. The aggregate of the present value of the dependency of  $j$  on  $i$  for  $T$  periods is  $d_{ji} = \sum_{\tau=1}^T (d_{ji\tau} / (1 + \alpha)^\tau)$ , where  $\alpha$  is the discount rate for future loss. The dependency of a person on other is higher when the other person has higher monopoly or monosony power. On the contrary, when there is a prefect competition for the goods (purchased or sold), the dependency is expected to be lowest due to large number of alternative sources. The dependency also includes the effect of the number of person following or not following the norm, because with increase in number of rule breakers, it becomes easier for any rule breaker to find an alternative source of supply, that is, utility loss and an addition in cost will be come down with increase in number of rule breakers.

Considering dependency level as the capacity of a person to influence the welfare of others, the power of any person  $i$  can be expressed as the average dependency of others members of the society on him, that is,  $m_i = \sum_{j=1, j \neq i}^n d_{ji} / (n-1)$ . Here, the power of a person should not be misunderstood as his income or wealth. For example, a police officer can be considered a powerful person if he can influence other's welfare by refusing to protect them. The protection is a commodity, the control on which may make the police officer a powerful person if he has a monopoly over its supply, however he may not be rich. A rich man may be powerful as well, if people, for example, depend on him for their livelihood.

Let  $e_{ri}$  is  $i$ 's cost of performing one unit of activity  $y_r$ . Here cost means the cost of time spend, that is, opportunity cost of the time, and the money spent by punisher for it. This cost does not include the loss, which one has to bear, due to the breakage of his relationship with the rule breaker, as breaking of the ties may be the result of many activities. Therefore, the cost of a punishment activity related to breaking of the ties also includes only the cost of the steps taken for that, rather than its impact on punisher's income or welfare. The cost of performing a unit of any activity can be called as the efficiency of the person in doing that activity. Different activities bear different costs, that is, each activity has different cost, and each person has different efficiency level in performing the same activity. In other words, the cost of performing an activity is different for different people. The cost of performing an action is also not same for all the units. The cost of an activity is the function of number of units of the activity performed, geographical distance between the punisher and rules breaker, and power of punisher in comparison to the rule breaker, that is,  $e_{rij} = e(a_{rij}, \delta_{ij}, m_{ij})$ . The cost of punishment increases with increase in number of

units of activity and geographical distance, and it decrease with increase in the relative power of the punisher, that is,  $\partial(a_{rij}e_{rij})/\partial a_{rij} > 0$ ,  $\partial(\delta_{ij}e_{rij})/\partial \delta_{ij} > 0$  and  $\partial(a_{rij}e_{rij})/\partial m_{rij} < 0$ . It is because the productivity of the each additional unit of time, shifted for punishment activity, will be higher for other activities than the previous shifted unit. Similarly, larger geographical distance makes it difficult to reach the rule breaker due to unfamiliarity with a far-away place. Moreover, it takes more time to punish a distant rule breaker than someone nearby. Higher power of the punisher in comparison to rule breaker, on the other hand, brings down the cost of performing an activity. The marginal cost of punishment activity increases with increase in units of the activity and decreases with increase in the geographical distance, that is,  $\partial^2(a_{rij}e_{rij})/\partial a_{rij}^2 > 0$  and  $\partial^2(a_{rij}e_{rij})/\partial \delta_{ij}^2 < 0$ . Whereas, the increase in the value of  $m_{ij}$  decrease the cost of an action at decreasing rate, that is,  $\partial^2(a_{rij}e_{rij})/\partial m_{ij}^2 < 0$ . This means that with each additional increase in the power of  $i$  in comparison to power of  $j$ , it becomes more and more difficult to further reduce the cost of punishing  $j$ . The reason behind increasing marginal cost due to increase in units of the activity is that person has to shift his higher productive time with each further increase in units. Distance, on the other hand, increases the cost at decreasing rate, because there will be less addition of troubles, such as unfamiliarity of the place, with each further increase in distance, for example, a increase of distance from 1 km to 101 km increases the cost much more than a increase from 1000 km to 1100 km.

Beside the cost of different activities used against rule breaker, dependency is another factor which influence cost of punishing as well as exert a cost on the rule breaker. The dependency affect the cost of a punishment activity as high level of dependency

of punisher on rule breaker means that he is expecting to get more benefits from the relationship than from a relationship with comparatively lower level of dependency. A similar reason can be given for the rule breaker. Both, punisher and rule breaker have to bear the loss due to breakage of ties. Hence, the cost of punishing other person increases with increase in dependency. The relationship breaks when one receive the signal that other person has bad intention towards him. The extent of breakage of ties may also vary depending upon the extent of the signal. For instance, unclear (or less quantity) signals may just weaken the relationship than breaking it. The quantity of signals depend upon the type and number of units of actions taken by a person against other as certain types of actions produce more clear signals than others. Suppose,  $g_r$  is the extent of breakage of relationship between  $i$  and  $j$  due to the signal produced by one unit of activity  $y_r$ , which is also the function of number of units of activity, that is,  $g_r = g(a_{rij})$ . It is because each unit produces signals which makes the positions of the actors clear. However it will become difficult for each additional unit of activity to add to the further clarity. The total breakage from activity  $y_r$  will be  $g_r a_{rij}$  and total loss due to activity  $y_r$  is  $g_r a_{rij} d_{ij}$ . The extent of breakage of relationship due all actions' of  $i$  will be  $\sum_{r=1}^k g_r a_{rij}$ , where  $0 \leq \sum_{r=1}^k g_r a_{rij} \leq 1$ . The total welfare loss of  $i$  due to dependency on  $j$  will be  $\sum_{r=1}^k g_r a_{rij} d_{ij}$ . The extent of breakage due to an activity  $y_r$  will increase with increase in the number of units of the activity, but the increase will be at decreasing rate, that is,  $\partial(a_{rij} g_r) / \partial a_{rij} > 0$  and  $\partial^2(a_{rij} g_r) / \partial a_{rij}^2 < 0$ .

Let  $z_r$  is the cost imposed by institutions for the activity  $y_r$ . The cost of institutional provision of an activity means cost exerted by the institutions for performing that

activity. Here, institutions refer to both formal and informal as both influence the cost of performing an activity. However, the expected cost due to institutional provisions depends upon the probability of getting punished. The probability of getting punished for doing an activity is the function of efficiency of the system, number of units of activity performed and the power of the punisher in comparison to the rule breaker. The efficiency of the system can be expressed as the share of people who get punished for performed that activity. Let  $x_r$  is the share of people who got punishment for doing activity  $y_r$ . The number of units of the activity performed increase the likelihood of getting caught by making the act easier to recognize and provide further evidence of the act. Further, power of a person facilitates him to escape the punishment through his networks. Thus, person  $i$ 's probability of getting punished for performing activity  $y_r$  is  $P_{rij} = P(a_{rij}, x_r, m_{ij})$  and expected cost of institutional provision on person  $i$  will be  $P_{rij}z_r$ . The probability of getting punished increases with increase in the units of activity and efficiency, that is,  $\partial P_{rij} / \partial a_{rij} > 0$  and  $\partial P_{rij} / \partial x_r > 0$ , but both increase at a decreasing rate, that is,  $\partial^2 P_{rij} / \partial a_{rij}^2 < 0$  and  $\partial^2 P_{rij} / \partial x_r^2 < 0$ . On the other hand, the probability of receiving punishment decreases at decreasing rate with increase in  $i$ 's power, that is,  $\partial P_{rij} / \partial m_{rij} < 0$  and  $\partial^2 P_{rij} / \partial m_{rij}^2 < 0$ . It is so because each unit of activity produces some proofs of the activity which helps in enacting an institutional provision, however the number of extra proofs, which can be produced by an additional unit of activity or with addition in efficiency, decrease as earlier units have already provided most of them. It also shows that a comparatively powerful person has to bear lower cost for the same units of actions and efficiency of the system. It implies that in a society where power is

concentrated in a few hands or inequalities in power are higher, less powerful are more likely to get punished for breaking the norm than the more powerful. However, with increase in power further scope for decrease in probability will decrease as it cannot decrease below zero.

The cost of any particular activity will be different for each person and will depend upon the number of unit of each activity performed, cost per unit of the activity, dependency of punisher on rule breaker and the cost of institutional provisions of those activities. Given all this, the cost of performing the punishment activity  $y_r$  by  $i$  against  $j$  is

$$C_{rij} = a_{rij}e_{rij} + P_{rij}z_r + g_r a_{rij} d_{ij}$$

And the total cost of all activities borne by  $i$  to punish  $j$  is

$$C_{ij} = \sum_{r=1}^k a_{rij}e_{rij} + \sum_{r=1}^k P_{rij}z_r + \sum_{r=1}^k g_r a_{rij} d_{ij}$$

Here, the cost imposed by  $i$  on  $j$  is different from cost born by the punisher and depends up on actions undertaken against the rule breaker and degree of dependence of rule breaker on punisher. Similar to the cost of performing an action, the cost imposed differ from one to another activity. Let  $u_{ij}$  is the cost imposed on  $j$  by one unit of action  $y_r$  and the total cost imposed by the activity  $y_r$  is  $a_{rij}u_{ij}$ . The cost borne by  $j$  is determined by the number of units of an activity  $y_r$ , that is,  $u_{rj} = u(a_{rij})$ . Therefore, the total production of cost (or the total cost imposed) by punisher  $i$  against  $j$  is  $\sum_{r=1}^k a_{rij}u_{ij}$ . Each additional unit of activity adds to the total cost imposed, however, the imposition of cost becomes more and more difficult with

each additional unit of activity, that is,  $\partial(a_{rij}u_{rij})/\partial a_{rij} > 0$  and  $\partial^2(a_{rij}u_{rij})/\partial a_{rij}^2 < 0$ .

Further, the loss of rule breaker  $j$  due to the breakage of his ties with  $i$  will be  $g_{ij}d_{ji}$ , assuming that the extent of breakage of relationship,  $g_{ij}$ , is same on the side of both punisher and rule breaker. As a result, the cost borne by  $j$  due to activity  $y_r$  is  $Q_{rij} = a_{rij}u_{rij} + g_r a_{rij}d_{ji}$  and the total cost imposed on  $j$  due to all the activities of  $i$  is  $Q_{ij} = \sum_{r=1}^k a_{rij}u_{rij} + \sum_{r=1}^k g_r a_{rij}d_{ji}$ . Given all this, the total cost imposed by society on  $j$  for breaking the norm will be  $Q_j = \sum_{i=1}^n Q_{ij}$ . Here, one should remember that the rule breaker may undertake some costly actions against himself to show others that he is sorry for the breaking of the norm, which will bring down his psychological cost. Therefore,  $j$  (that is, the rule breaker) is also included in the total cost imposed on him. Here, the cost imposed by rule breaker on himself will be equal to his cost of performing punishment activity.

Now remembering our earlier discussion  $i$  gets five types of benefits from his action against  $j$ , which are: 1. the utility gain from the relative improvement in his position in the society, 2. reduction in bad name, 3. personal satisfaction if the norm is internalized, 4. gain/regain of trustworthiness, and 5. gain of importance in his group.

Let  $h_{rij}$ ,  $b_{rij}$ ,  $l_{rij}$ ,  $t_{rij}$  and  $o_{rij}$  are the monetary valuation of  $i$ 's benefits from- the relative improvement in his position in the society, reduction in bad name, personal satisfaction due to internalized norm, gain/regain of trustworthiness and gain of importance in his group, respectively, by performing one unit of activity  $y_r$  against  $j$ . The importance of the norm will differ from one person to other. Let  $s_i$  is the monetary valuation of the broken norm for  $i$  and value of internalization for whole



society is  $s = \sum_{i=1}^n s_i$ . The value of  $h_{rij}$  depends upon the cost imposed by the  $i$ 's actions on the rule breaker, that is,  $h_{rij} = h(Q_{rij})$ . It is because, a person's benefits, in this case, are related to his own psychology and has nothing to do with the other's opinion about him, therefore cost imposed on rule breaker benefits him directly by giving him satisfaction. On the other hand,  $b_{rij}$  and  $t_{rij}$  are determined by society's opinion about the punisher and the benefit he gets from punishing activity is the function of the cost incurred by him, as it signals others that he is no longer associated with the rule breaker, that is,  $b_{rij} = b(C_{rij})$  and  $t_{rij} = t(C_{rij})$ .

The value of  $l_{rij}$  is affected by punisher's psychology, cost imposed on rule breaker and the cost borne by the punisher. It is because the extent of internalization of norm vary from person to person and, hence, the psychological cost and benefits from punishing activity, that is, a higher extent of internalization gives higher satisfaction for same level of cost incurred and cost imposed. The satisfaction, here, comes from the cost borne by the rule breaker, where more cost imposed means more satisfaction. Nonetheless, cost incurred by punisher also affect the satisfaction from a punishment activity as higher cost of punishment reflects the higher sacrifice and higher sacrifice will give more reason for the person to think good about himself. For instance, a person, who consider inter-religion marriage bad, can punish his family member severely for breaking the norm, even when he is staying in a community which does not share that norm and there are least chance of getting any kind of punishment from the society for not punishing the rule breaker. However, the same person is less likely to impose severe punishment for the same act on a non-relative. This explanation is similar to the argument given by Nelson and Greene (2003) in the context of altruistic activities, where an altruist gets utility from the sacrifice as it gives him a reason to

feel good about himself. Given all the above reasons,  $l_{rij} = l(s_i, C_{rij}, Q_{rij})$ . The gain of  $i$  due to increase in his power,  $o_{rij}$ , by punishing  $j$ . Each punishment activity provides satisfaction to the people who has internalized the norm, which can be considered as receiving a service. Even though the free rider problem will be present in this case, people will be ready to pay him a price (as their support or in some other form) for his service due to their conscience and  $i$ 's gain depends on the extent of internalization of the norm in the society and the cost imposed by  $i$  on  $j$ , that is,  $o_{rij} = o((s - s_i - s_j), Q_{rij})$ . Marginal benefits of the activity will be positive, that is,  $\partial(a_{rij}h_{rij})/\partial a_{rij} > 0$ ,  $\partial(a_{rij}b_{rij})/\partial a_{rij} > 0$ ,  $\partial(a_{rij}l_{rij})/\partial a_{rij} > 0$ ,  $\partial(a_{rij}t_{rij})/\partial a_{rij} > 0$ , and  $\partial(a_{rij}o_{rij})/\partial a_{rij} > 0$ , however the marginal benefits will diminish with addition in the units of a activity, that is  $\partial^2(a_{rij}h_{rij})/\partial a_{rij}^2 < 0$ ,  $\partial^2(a_{rij}b_{rij})/\partial a_{rij}^2 < 0$ ,  $\partial^2(a_{rij}l_{rij})/\partial a_{rij}^2 < 0$ ,  $\partial^2(a_{rij}t_{rij})/\partial a_{rij}^2 < 0$  and  $\partial^2(a_{rij}o_{rij})/\partial a_{rij}^2 < 0$ . The reason behind this is that each activity fulfills certain goals and there is a limit to which one can have the benefits. Therefore, with increase in number of units of activity it becomes more difficult to reap the benefits from each additional unit of the size that its previous unit has provided.

The benefits of  $i$  from the activity  $y_r$  are  $B_{rij} = a_{rij}(h_{rij} + b_{rij} + l_{rij} + t_{rij} + o_{rij})$ , and the total benefits that  $i$  will get by punishing  $j$  are  $B_{ij} = \sum_{r=1}^k a_{rij}(h_{rij} + b_{rij} + l_{rij} + t_{rij} + o_{rij})$ . Given the cost and benefits of the punisher, the net benefits of  $i$  by performing the activity  $y_r$  against  $j$  are  $\pi_{rij} = a_{rij}(h_{rij} + b_{rij} + l_{rij} + t_{rij} + o_{rij}) - (a_{rij}e_{rij} + P_{rij}z_r + g_r a_{rij} d_{ij})$  and the net benefits of  $i$  from all the activities are

$$\sum_{r=1}^k \pi_{rij} = \sum_{r=1}^k a_{rij} (h_{rij} + b_{rij} + l_{rij} + t_{rij} + o_{rij}) - (\sum_{r=1}^k a_{rij} e_{rij} + \sum_{r=1}^k P_{rij} z_r + \sum_{r=1}^k g_r a_{rij} d_{ij})$$

$$\text{or } \pi_{ij} = B_{ij} - C_{ij}$$

While the marginal benefits of a punishment activity will be diminishing with increase in its units, the marginal cost of punishment will increase with increase in the units of the activity. Given diminishing marginal benefits and increasing marginal cost, the level of punishing activities (that is, extent of reaction against the rule breaker) will be fixed, where the net benefits will be maximum.

Though, positive net benefits give a person the reason to act against the rule breaker, it may not be enough to choose the punishment activity, because to do that the person may have to shift the resources from its more beneficial use. To understand, let us assume a utility function  $U = U(X_1, X_2, X_3, \dots, X_f)$  subject to the income constraint  $D_1 X_1 + D_2 X_2 + \dots + D_f X_f = I$ , where  $X_f$  and  $D_f$  are quantity and price of good  $f$ , respectively, and  $I$  represents the income of the person. People try to maximize their utility given their income. Suppose, each punishment activity is a commodity which provides utility to its consumer and comes at a certain cost, thus the punishment activities are incorporated in the utility function and the cost of activity is the part of constraint. Now, a person with less income is likely to perform less punishment activity against the rule breaker, as the marginal utility of other commodities will be higher for him. On the other hand, a person with comparatively more resources is likely to take up more punishment activities, because the marginal utility of other commodities will come down with their more consumption due to the applicability of diminishing marginal utility.

The points, which can be made based on the above discussion, is that institutional provisions, power and income of a person play a crucial role in a person's decision of taking up the punishment activity, and, by doing so, determine the punishment that one has to bear for breaking up the rule. An institutional provision, which restricts certain types of punishment activities, will change the selection of activities either in the favor of unrestricted activities or towards activities which has less expected cost of institutional provisions. However in both the cases the institutional restrictions will bring down the punishment activities by adding to the total cost of punishment. Asymmetry in powers, where a few people controls the welfare level of others, is another factor that causes asymmetry in following of the norms. Where a less powerful person has to bear severe punishment for breaking the norm, a powerful person can easily avoid punishment for breaking the same norm, as if he is exempt from it. A limit to the power or reduction in monopoly power on the goods will make the society more symmetric in terms of bearing punishment for breaking the norm. For instance, the police officer, in our earlier example of power, will loose his power if people have the choice to go to his senior officers or court to seek protection without much addition in the cost. Income level plays a decisive role in a person's choice to punish the rule breaker. While, a lower income person may find it difficult to punish the rule breaker due to lack of resources and other more important needs, a rich person, on the other hand, may take up punishment activities due to his diminishing marginal utility from other goods.

The above arguments provide an answer to the question: why and when does a person decide to punish the rule breaker and how will he choose the activities to punish him? Nonetheless, the analysis also provides a few insights into the reasons for the existence of informal institutions for a long time. The most important reason at any

point of time is definitely the extent of internalization of the norm in the society. The organizations developed due to the internalization also play an important role and make the change difficult. For example, people, as discussed earlier, sell their service of punishing the rule breakers to the people who have internalized the norm and gain power and enjoy the other benefits of power. These people often form their networks and start working as an organization. These organizations or people try to stop any change that can affect the extent of internalization of the norm because decrease in internalization will bring down the demand and, hence, the payments for their services. Because any effort to stop change comes at a cost (which may include the cost of formal or informal sanctions), the organizations will take up steps to prevent change till the cost of their efforts does not exceed the loss due to decrease in internalization. The organizations may also take up steps to increase or expand internalization if the addition in cost is less than its benefits by increase the power.

A part of the answer also lies in distribution of power and resources in a society, and the relation between the two. The powerful and rich are in a better position to work as agents of change or restrict the change. If power and resources are concentrated in a few hands, a change in norm that affect the powerful and rich adversely will be difficult to made even when they themselves may not be following it. Their control over possible change will be much higher when power and richness have high positive correlation, that is, the powerful are rich too and vise-versa. However, the power asymmetry comes down when many powerful people start competing each other for sale and purchase of the same products and could not form a cartel. The expansion of markets may also play a major role in decreasing the dependency, for example, if insurance market is developing people will depend less on their relative,

and development of banking system in a rural area may reduce people's dependency on local landlords.

People can also work as the engine of change, if someone among them takes costly action against the present situation, and people pay for his services (provide their support and other help) for this public good due to their conscience. In other words, people give power to an agent of change. However, it needs large number of people who have not internalized the norms to understand the importance of change and demand it.

#### **4. Other Implications**

In addition to providing the reason for the sustainability of social norms, it also explain why people who are related to the rule breaker feel shame and take actions against themselves which sometimes may go up to suicide. Take, for example, the case of suicide. Here, the case of suicide is taken because it is a very clear example of one's action against himself.

Suppose that a rational person tries to maximize the sum of utilities gained over his lifetime. To understand this, assume that a person's life can be divided into periods where  $U_t$  is the utility at any time period  $t$  and he expects to live for  $L$  number of periods. Now, people prefer the present utility than the future one and trade the present utility for the future one if the discounted present value of the expected future utility gain is higher than the present utility loss. Here expected future utility gain will depend on the probability of success, probability that the person will live up to that period and the total utility gain if the person succeeds. Let,  $\omega$  be the discount rate of the future utility for the person (the discount rate may differ from one person to the other). Therefore, the total present value of utility of a person can be written as

$\sum_{t=1}^L U_t / (1 + \omega)^t$ . Given all this, a person will decide to end his life at any time period  $\phi$  if the total present value of his utility will be negative for any possible future time period (from  $\phi$  onwards), that is,  $\sum_{t=\phi}^{\phi+\theta} U_t / (1 + \omega)^t < 0$  for all possible values of  $\theta$ , where  $\theta \geq 1$ .

Now, a person who is related to the rule breaker may have to suffer the negative utility due to bad name and loss of trustworthiness. The negative utility will increase with the closeness of the relation of the person with the rule breaker. The negative impact due to closeness of the person with a rule breaker may lead to the negative total present value of the utility for all the future periods and results into a suicide. The chance of suicide by a close relative will be higher if he could not prove himself separate from the rule breaker by punishing him, as it will bring down the negative impact on utility by decrease the cost on him.

## 5. Conclusion

Despite the wide understanding of researchers about the impact of social norms on economic activities, the reason for the sustainability of social norms are less known. The present study is an attempt to provide the reasons for the sustainability of social norms by explaining the incentives of a punisher to punish the person. The reason for punishing the rule breaker can be understood in the light of competition among people to hold a better place in the society. A person has incentive to punish the rule breaker if people can use the breaking of social norms by someone to prove themselves better than him, but only a person, who takes up punishment activity, improves his position.

Further, the status of the people is also affected by the activities of their closed ones, therefore breaking of social norms by any person also affect the status of his closed

ones (which we call here as 'bad name'). It can also have an impact on the trustworthiness of the closed ones, which will add up to their problems. In this case, people who are closed to the rule breaker will have incentive to punish the rule breaker if punishing him can bring down the cost due to the closed relationship by proving that they are no longer associated with him.

The punishment activity can also be used by some people to increase their power and get other benefits if people in the society have internalized the social norms and pays him for the taking up punishment activity through various ways due to their conscience. These types of people also have incentive to invest in continuing the social norms as there income depends on the incentives from this service.

In addition, taking up the punishment activity depends on the income of a person. It is because the punishing someone is a costly affair which requires people to shift their income from other types of consumptions to punishment activity, and a person will take up punishment activity, only if his decrease in utility from the shift is less than the utility gain from punishment activity. As a result, a poor person may take up less punishment activity compared to his rich counterpart.



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